



MONTHLY AIR QUALITY REPORT FOR JULY 2013

AQI COLOR SCALE

GOOD 0-50	MODERATE 51-100	UNHEALTHY FOR SENSITIVE GROUPS 101-150	UNHEALTHY 151-200
	VERY UNHEALTHY 201-300	HAZARDOUS 301-500	

Calendar of maximum AQI values & their corresponding color for July 2013*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

1 (day of month)	O3	CO
	PM10	PM2.5

SUN			MON			TUES			WED			THU			FRI			SAT		
		1	87	06		2	106	05	3	97	05	4	67	06	5	71	07	6	61	07
			97	80			120	73		68	41		52	42		46	40		50	43
7	100	07	111	06		9	48	06	10	71	05		90	06		47	06		84	06
	66	55	45	37			56	65		53	34	11	26	27	12	83	34	13	36	27
	50	05	74	06		16	67	05	17	127	06	18	116	05	19	97	06	20	100	05
14	34	27	50	30			33	35		21	24		32	39		51	20		31	23
21	49	06	49	07		23	74	07	24	80	05	25	67	06	26	87	06	27	49	05
	15	23	21	35			24	33		27	34		40	35		23	29		20	28
28	43	05	48	05		30	49	05	31	50	05									
	39	28	26	22			31	21		42	31									

Calendar of High Pollution Advisories and Health Watches issued during July 2013

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
1	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

LEGEND

HIGH POLLUTION ADVISORIES

A = PM-10 High Pollution Advisory
B = PM-2.5 High Pollution Advisory
C = Ozone High Pollution Advisory

HEALTH WATCHES

D = PM-10 Health Watch
E = PM-2.5 Health Watch
F = Ozone Health Watch

Calendar of Meteorological Conditions observed in Metro Phoenix during July 2013

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

LEGEND

ELECTROMETEORS

A = Thunderstorm

HYDROMETEORS

B = Rain/Drizzle/Hail
C = Fog

LITHOMETEORS

D = Blowing Dust
E = Haze (vsby <10SM)
F = Smoke

Non-Ozone Exceedance days during JUL 2013-

Total=	1	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		7/02	120	PM-10	Durango
			120	PM-10	West Forty Third

Non-Ozone Health Watches issued during JUL 2013-

Total=	0	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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Non-Ozone High Pollution Advisories issued during JUL 2013-

Total=	0	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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<u>Concentration Recap:</u>	Days in the Good category:	8
	Days in the Moderate category:	19
	Days in the Unhealthy for Sensitive Groups category:	4
	Days in the Unhealthy category:	0
	Days in the Very Unhealthy category:	0
	Days in the Hazardous category:	0
	Total Forecast Days:	31

Narrative: Valley air quality during the month of July began on a sour note with very high ambient PM-10 (coarse) and PM-2.5 (fine) particle levels on the 1st due to high volumes of lingering suspended dust from the previous evening's thunderstorm outflow-generated dust event as well as some wildfire smoke. This was followed on the 2nd by both morning and evening thunderstorm outflow wind and blowing dust events with wind gusts as high as 36 mph and visibilities as low as four miles during the former, and 28 mph winds and six mile visibilities during the latter. This combination contributed to another PM-10 exceedance event during which the coarse particle standard was exceeded at the West Forty Third and Durango monitoring sites. Figures 1 and 2 below show the PM-10 time-series graphs for both sites for July 2. Except for one more outflow boundary/dust event on the 12th, highest PM-10 levels were mostly in the good range of the Air Quality Index for the remainder of the month due to rainfall on numerous days.

Figure 1

Name: **DURANGO COMPLEX**

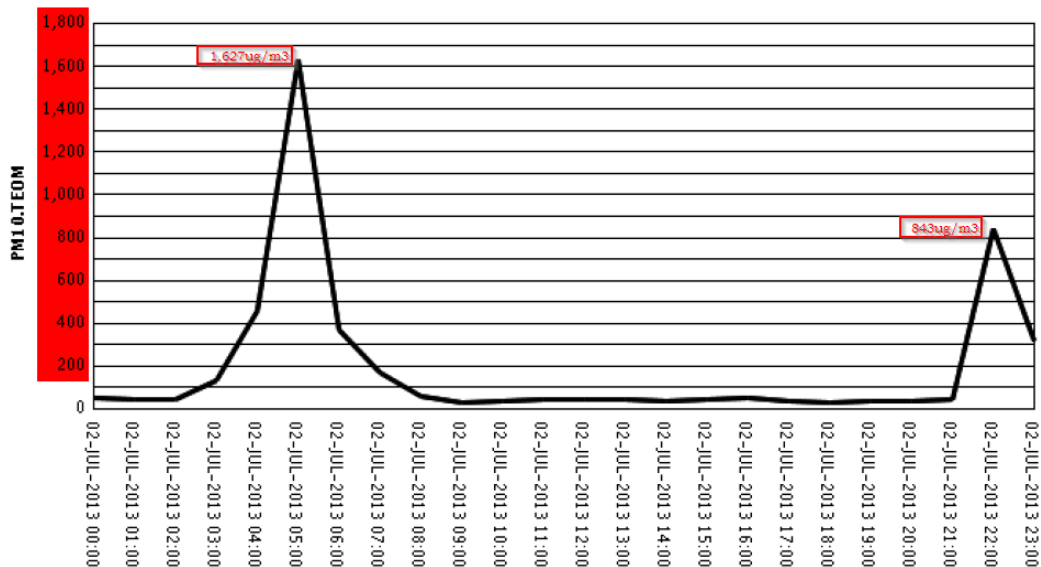
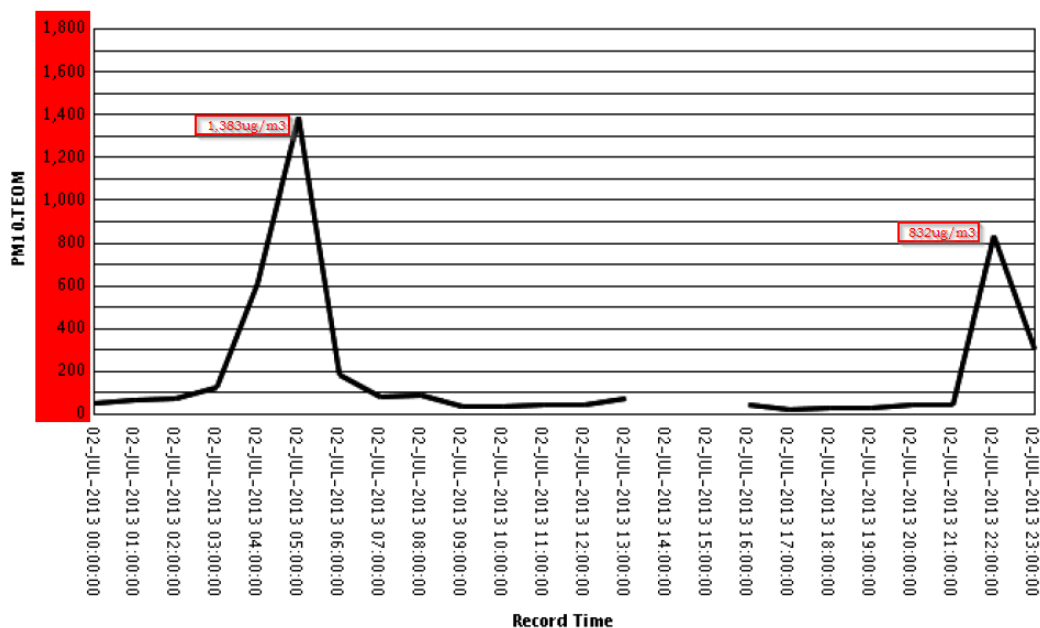


Figure 2

Name: **WEST FORTY THIRD**



DETAILED OZONE SECTION

(Based on the 2008 EPA Revised 8-Hour Ozone Standard)

GOOD	MODERATE	UNHEALTHY FOR SENSITIVE GROUPS	UNHEALTHY
0-50	51-100	101-150	151-200

SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR JULY 2013*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
		1	87	2	106	3	97	4	67	5	71	6	61
7	100	8	111	9	48	10	71	11	90	12	47	13	84
14	50	15	74	16	67	17	127	18	116	19	97	20	100
21	49	22	49	23	74	24	80	25	67	26	87	27	49
28	43	29	48	30	49	31	50						

8-hr Ozone exceedance days in JUL:

Total= 4

<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
7/01	78/106	Mesa
	77/104	Falcon Field
7/08	80/111	North Phoenix
	79/109	Mesa
	78/106	Pinnacle Peak
	77/104	Blue Point
	77/104	Phx Supersite
	77/104	South Scottsdale
	76/101	Falcon filed
7/17	86/127	Mesa
	83/119	West Phoenix
	82/116	Falcon Field
	81/114	Phx Supersite
	81/114	South Phoenix
	81/114	West Chandler
	80/111	North Phoenix
	79/109	Central Phoenix
	79/109	South Scottsdale
	77/104	Queen Valley
	77/104	Tempe
	76/101	Blue Point
	76/101	Glendale

7/18	82/116	West Phoenix
	80/111	South Phoenix
	79/109	Central Phoenix
	79/109	Mesa
	79/109	Phx Supersite
	76/101	North Phoenix

Total number of exceedance days since APR 01: 10
Total number of exceedance sites since APR 01: 48

<u>Ozone Health Watches in JUL:</u> (Forecast max value 72-75 ppb)	Total= 7	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		7/03	74/97	Pinnacle Peak
		7/04	65/67	Queen Valley
		7/08	80/111	North Phoenix
		7/09	57/48	Queen Valley
		7/18	82/116	West Phoenix
		7/19	74/97	North Phoenix
				Phx Supersite
		7/25	65/67	South Phoenix

Ozone Health Watches since APR 01: Total= 21

<u>High Pollution Advisories in JUL:</u> (Forecast max value 76+ppb)	Total= 0	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
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High Pollution Advisories since APR 01: Total= 2

<u>Concentration Recap:</u>	Days in the Good category:	10
	Days in the Moderate category:	17
	Days in the Unhealthy for Sensitive Groups category:	4
	Days in the Unhealthy category:	0
	Total Forecast Days:	31

Maximum 8-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	7/17	1000	Mesa	86/127	Wed

Maximum 1-Hr value:	<u>Date</u>	<u>Hour</u>	<u>Site</u>	<u>ppb/AQI</u>	<u>DOW</u>
	7/02	1400	Mesa	97/81	Tue

Average daily max 8-Hr concentration (ppb):	66.8
Deviation from the 1996-2012 average (ppb):	-3.0

<u>JUL Climatology:</u> (Period 1996-2007 using 1997 85ppb standard & 2008-2012 using 76ppb standard)	Average number of 8-Hr exceedance days:	3.6
	Maximum number of 8-Hr exceedance days:	10 in 1996
	Minimum number of 8-Hr exceedance days:	0 in 1997, 1999, 2007, '10
	Average daily max 8-Hr concentration (ppb):	69.8
	Record high max 8-Hr concentration (ppb):	107 on the 9th, 2002
	Record low max 8-Hr concentration (ppb):	40 on the 29th, 1997

<u>Forecast Verification:</u>	# of days maximum concentrations were over-forecast:	16
	# of days maximum concentrations were under-forecast:	12
	# of days maximum concentrations were correctly forecast:	3
	Jul average forecast accuracy (ppb):	+/-6.1
	Jul average forecast bias (ppb):	+0.2

Narrative: Weather conditions in the Valley during July 2013 were fairly typical for the month with an active summer monsoon circulation pattern. A low-level easterly wind-flow, that is one characteristic of this circulation pattern, occurred over the Phoenix metro area during a number of afternoon periods and was especially evident on the 17th and 18th of the month. This helps to explain the total of 19 ozone site exceedances that occurred during that two-day period since such a wind-flow tends to trap ozone and its precursors overhead resulting in much above average ozone formation and accumulation.
–Reith